Applicant: Yanbin Shao Serial No.: 10/075,433

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Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

- 1. (Currently amended) A four port circulator comprising:
- a first input port operable to receive light of a first and a second polarization;
- a polarization beam splitter optically <u>coupled to the first input port and operable to reflect</u> the light of the first polarization and pass the light of the second polarization;

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- a first reflector optically coupled with to the polarization beam splitter;
- a first non-reciprocal device <u>optically</u> coupled to the first reflector <u>and operable to</u> <u>convert the light of the first polarization into light of the second polarization;</u>
 - a second non-reciprocal device coupled to the polarization beam splitter; and a second reflector coupled with the polarization beam splitter.
- a first output port operable to receive light of the second polarization from the non-reciprocal device; and
- a second output port operable to receive light of the second polarization from the polarization beam splitter.
- 2. (Currently amended) The four port circulator of claim 1, further comprising an isolator optically coupled with to the polarization beam splitter.
- 3. (Currently amended) The four port circulator of claim 1, further comprising a polarizer optically coupled with to the first non-reciprocal device.
 - 4. (Canceled)
- 5. (Currently amended) The four port circulator of claim 1, further comprising an isolator optically coupled with to the first reflector.





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6. (Currently amended) The four port circulator of claim 1, wherein the first non-reciprocal device includes a half wave plate and a Faraday rotator.

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7. (Canceled)

8. (Currently amended) A method for transmitting light among a first port, a second input port, a third first output port, and a fourth second output port, the light having either a first polarization or a second polarization, the method comprising:

sending a first forward transmitting a light signal including a first and a second component having a first and second polarization, respectively, from the first polarization onto a polarization beam splitter;

directing the first forward component of light onto a first reflector; reflecting the first forward component of light onto a first non-reciprocal device; changing the polarization of the first forward component of light from the first polarization to a second polarization; and

directing the first forward component of light into the second a first output port;

directing the second component of light onto a second non-reciprocal device;

maintaining the polarization of the second component of light as the second component passes through the second non-reciprocal device; and

directing the second component of light into the second output port.

- 9. (Canceled)
- 10. (Canceled)
- 11. (Canceled)

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12. (Currently amended) The method of claim 8, wherein the step of directing the first forward component of light into the second first output port includes:

is a step of directing the first forward components of light into the second first output port through a polarizer.

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13. (Currently amended) The method of claim 9 8, wherein the step of directing the second forward component of light into the third second output port is a step of includes:

directing the second forward component of light into the third second output port through a polarizer.

14. (Currently amended) The method of claim 8, wherein the step of sending transmitting a first and a second forward component of light with the first polarization onto a polarization beam splitter is a step of includes:

sending the first <u>and the second</u> forward <u>component of</u> light with the first polarization onto a polarization beam splitter through an isolator.

- 15. (Canceled)
- 16. (Canceled)
- 17. (Canceled)
- 18. (New) A circulator, comprising:

first and second input ports, the first and second input ports each being operable to receive light of a first polarization;

a first reflector optically coupled to the first input port;

a non-reciprocal device optically coupled to the second input port and operable to convert light of the first polarization into light of a second polarization;

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a polarization beam splitter optically coupled to the first reflector and to the non-reciprocal device, and operable to pass light of the first polarization and reflect light of the second polarization;

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a second reflector optically coupled to the polarization beam splitter; and an output port optically coupled to the second reflector and operable to receive light of the first polarization and light of the second polarization.

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- 19. (New) The circulator of claim 18, further comprising a polarizer optically coupled to the non-reciprocal device.
- 20. (New) The circulator of claim 18, further comprising an isolator optically coupled to the second reflector.
- 21. (New) The circulator of claim 18, wherein the non-reciprocal device includes a half wave plate and a Faraday rotator.